

CLAIMS

1. Lockable elastic joint for anthropomorphous robot provided with
wrist and handling organ, comprising a first part fastenable to the wrist of
the robot and a second part fastenable to the handling organ of the robot,
characterised in that it comprise first coupling means between said parts that
are suitable to maintain the same parts at a pre-set distance and on planes
parallel to each other and second coupling means between said parts suitable
to allow in an elastic way or, as an alternative, to prevent mutual movements
of said parts along two directions parallel to the planes of the two parts and
perpendicular to each other and around an axis perpendicular to the
aforesaid planes.

5

2. Lockable elastic joint according to claim 1, characterised in that said
first and second part have essentially plane square shape with radial
extensions and said first coupling means are made up of spherical
articulation connecting rods that extend perpendicularly to the lying planes
of the two parts and are hinged, each one, into radial extensions of said parts
over them.

10

3. Lockable elastic joint according to claim 2, characterised in that said
second coupling means are made up of fluid-mechanic cylinders that extend
parallel to the lying planes of the two parts and are interposed, each one,
between adjacent radial extensions of said parts.

15

4. Lockable elastic joint according to claim 3, characterised in that said
fluid-mechanic cylinders are fed with fluid at high pressure that locks them
in central position or as an alternative with fluid at medium pressure that
yieldingly thrusts them in said central position.

20

5. Lockable elastic joint according to claim 3, characterised in that said
fluid-mechanic cylinders comprise pistons operating from opposite sides on
a sliding block that is fastened to one of two terminal stems of the fluid-
mechanic cylinder, means being provided to alternatively submit said
pistons to fluid at high and at medium pressure in order to lock and,

25

30

respectively, to allow the elastic movement of said sliding block.

6. Lockable elastic joint according to claim 3, characterised in that said fluid-mechanic cylinders comprise flexible membranes and pistons that are alternatively subjectable to fluid at high and at medium pressure in order to lock and, respectively, to allow the mutual elastic movement of terminal stems of the fluid-mechanic cylinder.

7. Lockable elastic joint according to claim 1, characterised in that it comprises locking means that are suitable to lock the two parts to each other in any decentralised position the one with respect to the other.

10 8. Lockable elastic joint according to claim 7, characterised in that said locking means comprise fluid-mechanic cylinders that are fastened to one of said parts and pads that are fastened to the other one of said parts by interposition of small flexible stabilising plates.